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June 21, 2023

VIA ELECTRONIC FILING

Ms. A. Shonta Dunston
Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Proposed Modifications to the Existing Commission-Approved Residential Power Manager Load Control Service ("Power Manager"); Docket No. E-7, Sub 1032.

Dear Ms. Dunston:

Enclosed for filing with and approval by the North Carolina Utilities Commission (the "Commission") is Duke Energy Carolinas, LLC's ("DEC" or the "Company") proposed modifications to its existing, Commission-approved Residential Power Manager Load Control Service (the "Program" or "Power Manager"), an energy efficiency ("EE") program approved in accordance with Commission Rule R8-68. The Program was approved by the Commission in Docket No. E-7, Sub 831 as part of DEC's portfolio of programs on February 26, 2009, and has been subsequently modified pursuant to Commission Orders in Docket No. E-7, Sub 1032. As described below, the modifications proposed herein will allow the Company to control customers' storage devices and be available to eligible customers, including those participating in the Commission-ordered solar plus storage pilot program's Cohort B (who, per the Commission's order, must give the Company "control over" their battery storage devices).[1]

In its current form, Power Manager is a cost-effective, demand response program that permits the Company to exercise control options over residential participants' heating, ventilation, and air conditioning ("HVAC") systems. The Program is available to eligible,

[1] On March 23, 2023, the Commission issued an order in Docket Nos. E-7 Sub 1261 and E-2 Sub 1287 requiring the Company to develop a solar plus storage pilot program and control storage devices for customers in "Cohort B" of that program.

individually metered residential customers receiving concurrent service from the Company. It provides participants with financial incentives in exchange for employing a control device (either a Company-provided Cooling or Heating Load Control Device or an eligible customer-owned thermostat) that enables the Company to interrupt service to the participants' HVAC systems. Participants grant the Company the ability to make brief adjustments to their thermostat temperatures or reduce the run-time of their HVAC units during peak electric demand periods (such as when summer or winter temperatures are extreme causing high-levels of electricity demand and strain on the grid). The Program thus shifts energy usage away from peak periods of energy usage and reduces the electric load to the grid.

The Program modifications arise out of the Company's effort to comply with the Commission's March 23, 2023, Order in Docket Nos. E-2, Sub 1287 and E-7, Sub 1261 (the "Order"). In the Order, the Commission directed the Company to develop a pilot program to evaluate operational impacts to the electric system of behind the meter residential solar plus energy storage (the "Pilot Program"). Per the Order, the Pilot Program must have two participant groups, including one—known as Cohort B—in which the participants must give the Company "control over" their battery storage devices. *Order*, at p. 6. Pursuant to the Order, the Company has developed a PowerPair^{SM} Solar and Battery Installation Pilot Program ("PowerPair^{SM} Pilot Program"). A necessary component of the PowerPair^{SM} Pilot Program is the requirement that Cohort B's participants enroll in a Battery Control ("Battery Control") option which will enable the Company to exert the requisite control over Cohort B's battery storage system. Additionally, it will allow the Company to evaluate demand reduction impacts attributable to Battery Control, including: an estimation of the average (kW) and aggregate (MW) dispatch capabilities that are achieved during control events and the overall average event; dispatch impacts under different event conditions; and the effectiveness of Battery Control design and processes.

To implement the Battery Control option, the Company seeks to modify and expand the current Program by adding an option for customers[2] to participate in control services for eligible battery storage systems ("Installed Equipment"). Under this proposed "Battery Control" option, participants will give the Company (or a third party acting on the Company's behalf) the ability, at its discretion, to charge, discharge, and store energy using the Customer's Battery ("Control Events"). There will be Control Events up to 18 times per winter control season (during the months of December through March), up to 9 times per summer control season (during the months of May through September); and up to 9 times in the remaining months. Battery Control will allow the Company to balance the energy and capacity needs on the utility system. In exchange for granting the Company control over Installed Equipment, the Company will pay customers a monthly incentive tied to the capacity of the Installed Equipment.

[2] As explained, Battery Control will be available to eligible customers, which will include, but not be limited to, the Pilot Program's Cohort B.

The proposed modifications to the Program and its associated tariff and the details of the Battery Control option are outlined in the attached filing package, prepared in accordance with Rule R8-68(c)(2)-(3). In summary, the Company is requesting that the Commission approve the following Program and tariff modifications:

- **Addition of an option to participate in Battery Control.**

  As noted above, Battery Control will be available to customers who install and operate an approved battery storage system. Customers may have more than one battery component, but they must have the Installed Equipment configured in a manner that allows the Company to remotely communicate and control it. Upon request, the Company shall have the right inspect and verify the Installed Equipment.

  Through Battery Control, the Company or a third party acting on the Company's behalf shall be allowed, at its discretion, to charge, discharge, and store energy using the Customer's Battery. The Company will not discharge the Battery below a 20% state of charge. There will be Control Events up to 18 times per winter control season (during the months of December through March), up to 9 times per summer control season (during the months of May through September); and up to 9 times during the remaining months.

  Participants will have the option to opt out of a Control Event, but if a participant exceeds four (4) Control Event opt-outs in a single year, the Company may remove the participants from the Program.

  None of the energy discharged during a Control Event shall be considered eligible for resale to the Company, and any value associated with the discharged energy shall be considered to be compensated for as part of the participants' monthly incentive (described below).

- **Addition of a monthly incentive credit for participants in Battery Control.**

  Battery Control participants will be provided a monthly incentive payment following the successful installation and enrollment of their Installed Equipment.

  Specifically, participants will receive a $6.50/kW monthly incentive credit which will be based on their battery's nameplate continuous discharge capacity (as such is defined by the battery manufacturer) adjusted by a capability factor. The capability factor will be posted to the Company's website and will be updated based on EM&V results. The capability factor adjusts for operational and program constraints, including, but not limited to, battery capacity, reliability of device connection, system losses and systems not always being fully charged at the time of the event. The capability factor will be updated periodically based upon actual program results.

Participants that choose to opt out of or override Control Events beyond the allowed four per year will become ineligible to receive the monthly incentive.

The objective of the proposed Program modification is to leverage a behind the meter resource to provide storage and dispatch capacity to the system. By controlling participants' battery storage systems, the Company will be able to reduce the energy and capacity needs on the grid. That reduction in capacity will be especially beneficial for winter capability, shifting of solar in the winter, and to meet ongoing actions the Company is taking to meet carbon-free goals.

The Company has modeled the Program's cost effectiveness results arising from these modifications. Those results are reflected in the attached Rule R8-68(c)(2) information (specifically in Attachment B, Line 14).

The Company respectfully requests the proposed modifications to the Program and its associated tariff become effective no earlier than 180 days following approval. The Company is also aware that under Commission Rule R8-68(d)(2) other parties have thirty days from the date of the filing in which to petition for intervention, protest, or file comments.

In conclusion, the Company respectfully requests that the Commission:

1. Approve the Power Manager modifications and tariff (provided on Attachment G) to become effective no earlier than 180 days following approval, and continue as long as the measure is cost-effective or the Commission orders otherwise.

2. Find that Power Manager (as modified) continues to meet the requirements of a "new" EE program consistent with Rule R8-69.

3. Find that all costs incurred by the Company associated with the Power Manager Program continue to be eligible for cost recovery through the annual Demand-Side Management and EE rider in accordance with Rule R8-69(b).

4. Approve the proposed utility incentives for continued inclusion in the annual DSM/EE rider in accordance with Rule R8-69.

Please do not hesitate to contact me if you have any questions or need additional information.

Sincerely,

Kathleen Richard

Enclosure

cc: Parties of Record

CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC's Proposed Modifications to the Existing Commission-Approved Residential Power Manager Load Control Service Program, filed in Docket No. E-7 Sub 1032, has been served on all parties of record either by electronic mail, hand delivery or by depositing a copy in the United States mail, postage prepaid.

This 21st day of June 2023.

Kathleen Richard